ONKYO

Grand Integra

Instruction Manual

Grand Integra A-G10

Integrated Stereo Amplifier

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• Congratulations on your purchase of the ONKYO A-G10 Integrated Amplifier. • Please read this manual thoroughly before making connections and turning power on.
• Following the instructions in this manual will enable you to obtain optimum performance and listening enjoyment from your new A-G10. • Please retain this manual for future reference.

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Features

- **High Power Output**
  The A-G10 delivers 135 watts of clean, continuous power per channel into 8 ohms with no more than a remarkably low 0.008% total harmonic distortion. Its ability to drive low impedance loads is truly outstanding: dynamic power is rated at 2 x 460 watts into 2 ohms.
- **Oversized Power Supply Block for Effortless Drive of Low Impedance Loads**
  To faithfully amplify any music signal and provide the abundant power reserves required to faithfully reproduce today's wide dynamic range digital sources—these were the goals in the minds of the Onkyo engineers who developed the A-G10. To achieve them they employed only the finest quality components in the A-G10's power supply block, the foundation on which this amplifier's impressive performance is built. Five separate windings on the secondary side of the massive main power transformer provide independent voltages for each of the separate analog circuit blocks. The digital block of the D/A converter employs a separate power transformer. Finally, the left and right channel rectifier blocks feature high speed switching diodes and a total of eight high current split chemical capacitors.
- **Modular Construction Separates Principle Circuit Blocks**
  Each of the four principle circuit blocks of the A-G10 are isolated as far as possible from the others in order to keep electromagnetic interference to a minimum. The massive left and right channel power supply blocks are located as close to the output jacks as possible and heavily shielded. The Opto-Driven D/A converter and digital processing blocks are located in the opposite side of the chassis from the power supply and both encased in separate copper plated, electro-magnetically shielded cases.
- **Twin 18-Bit D/A Converters with Opto-Drive'**
  Built-in D/A converters mean that users can route digital output from CD and DAT players directly into the A-G10. Both optical and electrical input jacks are provided on the rear panel for this purpose. To convert the digital input into the purest, most distortion free music signal possible, the A-G10's dual 18-bit D/A converters are both equipped with Opto-Drive. Separate converters for the left and right channels eliminate phase shifting which can muddy the sound —especially in the high frequencies. 18-bit D/A conversion provides better linearity and higher resolution than 16-bit systems: benefits which are most apparent with delicate low level signals.
- **Opto-Drive' Power Amplifier Circuitry**
  The A-G10 employs Onkyo's exclusive Opto-Drive in the crucial differential amplifier stage for a music signal free of distortion caused by electromagnetic interference.

Important safeguards

"WARNING"
"TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE."

CAUTION
"TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL."

- For models having power cord with a polarized plug.

CAUTION: TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

FOR POWER CORDS WITHOUT PLUGS (FOR BRITISH MODELS)

- Replacement and mounting of an AC plug on the power supply cord of this unit should be performed only by qualified service personnel.
- *IMPORTANT: The wires in the mains lead are coloured in accordance with the following code:*
  Blue: Neutral
  Brown: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:
The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

Observe the following precautions to obtain troublefree performance for many years.

1. Avoid places subject to direct sunlight or extremely high or low temperatures.
2. Avoid damp or dusty places and places directly affected by vibrations from the speakers. In particular, avoid placing the unit on or above one of the speakers.
3. Avoid unstable locations and high places from which the unit could fall.
4. Ventilation – The unit should be situated so that its location or position does not interfere with proper ventilation. For example, the unit should not be placed on a bed, sofa, rug of similar surface that could block the ventilation openings or placed in a built-in installation, such as a bookcase or cabinet, that could impede the flow of air through the ventilation openings.
5. Heat – The unit should be situated away from heat sources such as radiators, heat registers, or other appliances (including amplifiers) that produce heat.
6. Cleaning of the internal parts should be performed only by qualified service personnel.
7. Spillage – Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through the openings.
8. Damage Requiring Service – The unit should be serviced by qualified service personnel when:
   A. The power supply cord or the plug has been damaged; or
   B. Objects have fallen or liquid has been spilled into the unit; or
   C. The unit has been exposed to rain; or
   D. The unit does not appear to operate normally or exhibits a marked change in performance; or
   E. The unit has been dropped or the enclosure damaged.
9. Servicing – The user should not attempt to service the unit beyond that described in the operating instructions. All other servicing should be referred to qualfied service personnel.

- This apparatus complies with requirements of EEC directive 82/499/EEC.

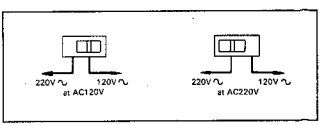
Precautions

1. **Warranty Card**
   The serial number is written on the rear panel of this unit. Copy the serial number and model number onto your warranty card and keep it in a safe place.
2. **Recording Copyright**
   Recording of copyrighted material for other than personal use is illegal without permission of the copyright holder.
3. **AC Fuse**
   The fuse is located inside the chassis and is not user serviceable. If power does not come on, contact your Onkyo dealer.
4. **Care**
   From time to time you should wipe off the front and rear panels and the cabinet with a silicon or other soft cloth. For heavier dirt, dampen a soft cloth in a weak solution of mild detergent and water, wring it out dry, and wipe off the dirt. Following this, dry immediately with a clean cloth. Do not use rough material, thinners, alcohol or other chemical solvents or cloths since these could damage the finish or remove the panel lettering.
5. **Power**
   WARNING
   BEFORE TURNING ON POWER FOR THE FIRST TIME, READ THE FOLLOWING SECTION CAREFULLY.

- Some models are designed for use only with the power supply voltage of the region where they are sold.

European models (except U.K.):	AC220V, 50Hz
Canadian models:	AC120V, 60Hz
U.K. & Australian models:	AC 240V, 50Hz
Worldwide models:	120 and 220V switchable, 50/60Hz

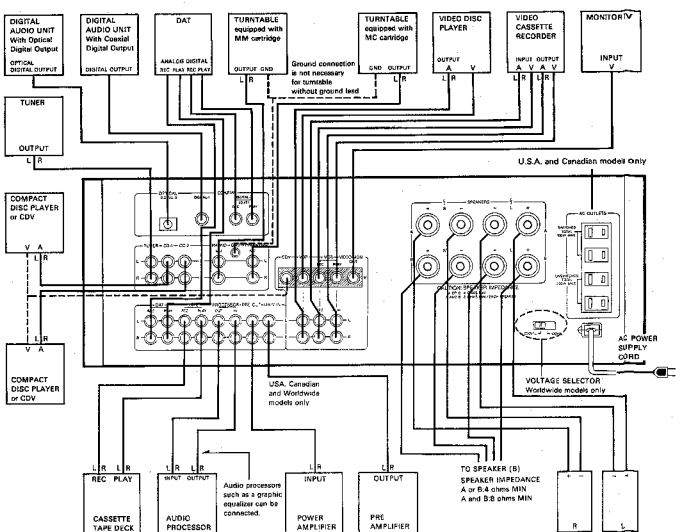
- **Voltage Selector (Rear Panel)**
  Worldwide models are equipped with a voltage selector to conform with local power supplies. Be sure to set this switch to match the voltage of the power supply in your area before turning the power switch on. Voltage is changed by sliding the groove in the switch with a screwdriver to the right or left. Confirm that the switch has been moved all the way to the right or left before turning the power switch on. Models without a voltage selector can only be used in areas where the power supply is the same as that of the unit.



System connections

Do not plug in the power cord until all connections have been made.

General
On each pair of input or output jacks, the lower jack (marked R) corresponds to the right channel, and the upper jack (marked L) to the left channel. When jacks on other equipment or connection cables are color-coded, the color red usually corresponds to the right channel (Red = Right). The video jacks, indicated with V, are also provided. A video component should be connected here. The short pin plugged into the input pin jack should not be inserted in any other pin jack. (This might cause malfunction.)



Turntable Connections
Connect a turntable which uses an MM cartridge to the PHONO MM jacks, and one which uses an MC cartridge to the PHONO MC jacks. Be sure to connect the ground (earth) lead wire from the turntable to the ground terminal (GND). Lack of proper ground connection will cause hum. Also observe the following precautions.

- Place the turntable on a firm shelf or desk free from vibrations (especially those generated by the speaker systems). If the turntable is permitted to pick up such vibrations, not only will this unit's performance suffer, but distortion in the bass range and howling noise in the speakers may also occur.
- Check the turntable instruction manual for any other precautions.
- The loud noises that occur when connecting and disconnecting the turntable leads could damage the speakers. Always turn the power switch off before making connections.

Tuner Connections
Connect an FM/AM tuner to the tuner input jacks. Be sure the left and right channels are connected properly.

Compact Disc Player Connections
Connect a compact disc player to the CD-1 or CD-2 input jacks. When using a CDV, connect the video output to the CDV jack. Be sure the left and right channels are connected properly.

Tape Deck Connections
Two tape decks can be connected at once to this unit. "DAT" jacks can also be used for tape deck connections. Connect the tape deck output leads to the PLAY jacks and the tape deck input leads to the REC jacks of this unit. For more details, refer to your tape deck owner's manual.

Processor jacks
These jacks can be attached for use with a sound processor such as a graphic equalizer.

Video Component Connections
With a video component with input and output capabilities, such as a video cassette recorder (VCR), you have to make connections with two sets of leads: input and output, each set consisting of audio signal left and right leads, and a visual signal lead. Connect the audio input left lead of your VCR to the VCR REC L jacks of this unit, the audio right lead to the VCR REC R jacks, and the video input lead to the VCR REC V jack. Likewise, connect the audio output left lead of your VCR to the VCR PLAY L jack of this unit, the audio output right lead to the VCR PLAY R jack, and the video output lead to the VCR PLAY V jack.
With a video component with output capability only, you will make connections with one set of leads. Connect the audio output left lead of your video component, such as a video disc player (VDP), to the VDP L jack, the audio output right lead to the VDP R, and the video output lead to the VDP V jack.

NOTE:
When you make all these connections, be sure to observe the polarity of the audio signal leads, and not to mix the video signal leads with the audio signal leads.

Monitor TV Connection
A monitor TV set can be connected to the VIDEO MONI. OUT jack.

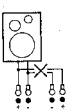
Pre-Out jacks
Connect a power amplifier to these jacks when you are using this unit as a preamplifier.

Main-In jacks (U.S.A., Canadian and Worldwide models only)
Connect a preamplifier to these jacks when you are using this unit as a power amplifier.

Connecting Digital Signals
This unit is equipped with four digital jacks: one optical input, two coaxial inputs, and one coaxial output. The digital output of a CD player, BS tuner, etc. can be connected to jacks labelled DIGITAL 1, 2, or 3.
For a DAT device, always connect digital output to PLAY of DIGITAL 2 (DAT) and digital input to REC of DIGITAL 2 (DAT). Analog input and output must always be connected to DAT REC and DAT PLAY. If connection is not performed as described above, oscillation or other problems may occur.
Digital signals which are input to DIGITAL 1 or DIGITAL 3 will be directly output to the DIGITAL 2 (DAT) REC jacks.

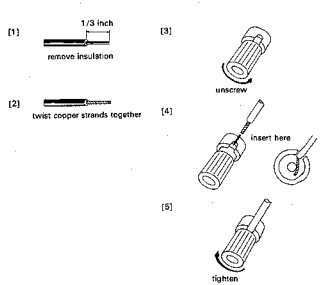
NOTE:
- Because this unit's optical digital input jack is of standard TOSLINK type, only optical cables with connectors of the same shape can be used.
- The optical digital input jack is covered with a protective cap. Remove this cap before connecting the cable, but leave the cap on if this jack is not in use.
- In case of connecting coaxial input/output of digital signals, make sure to properly distance the cables from the other cables. Noise may be generated when certain types of devices are connected.

Speaker Connections
When-connecting speakers, proper polarity is important. Always connect the (+) terminal (red) on the amplifier to the (+) terminal on the speaker and the (−) terminal (black) on the amplifier to the (−) terminal on the speaker. Two separate pairs of speaker systems can be connected to this unit at once.
- The load impedance of each speaker system connected to this unit must be at least 4 ohms. (A or B−4 ohms min., A and B−8 ohms min.)
- When using only one speaker or when you wish to listen to monaural, the single speaker should never be connected in parallel to both the right and left channel terminals at once.



- Do not use unnecessarily long or extremely thin speaker leads. If the DC resistance of the speaker leads is too high, the damping factor will decrease.

Connecting Speaker Cables
1. Remove about 1/3 inch of insulation from the end of the speaker cable.
2. Twist the exposed copper strands together tightly.
3. Unscrew the speaker terminal part way by turning it counterclockwise.
4. Insert the exposed copper portion of the cable all the way into the opening in the speaker terminal. Insert the copper strands in the same direction as that in which the screw is turned. If they are inserted in the reverse direction, they will come out when the screw is tightened.
5. Tighten the terminal screw by turning it clockwise.
6. Check to make sure that none of the uninsulated copper portion of the cable is exposed.



CAUTION:
When using banana plugs, make sure the speaker terminal screws are screwed in firmly before inserting banana plugs.

AC Outlets (U.S.A. and Canadian models only)
- **UNSWITCHED:**
  These outlets are not switched on and off by the power switch on the front panel. Capacity is total 200 watts.
- **SWITCHED:**
  These outlets are switched on and off by the power switch on the front panel. Capacity is total 100 watts.

Precautions When Setting
When using this set in conjunction with a television, if the television is too close to this unit, or if the antenna cable is too close to the cable used with this set, irregularities such as uneven coloring or a striped pattern may develop. If this happens, separate the set from the television, or put more distance between the antenna cable and the cable used with this set.

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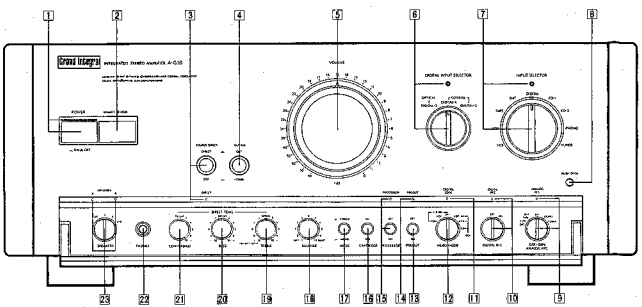
Front panel facilities

NOTE:

There are minor differences in features and specifications depending on area. Read this manual carefully to operate the model you have purchased correctly.



1 Power Switch (POWER) and Indicator
Press once to turn power on and once again to turn power off. An orange band over the power switch indicates power is on.

2 Remote Control Sensor
This sensor receives the remote control signals.

3 Source Direct Switch (SOURCE DIRECT) and Indicator
This switch can be used to change the performance source selected with the input selector switch.

DIRECT(■): The volume of the source selected by the input selector switch is input directly into the main amp by the source volume control. At this time the signal will bypass the tone control, muting, balance, mode, processor, and absolute phase* circuits. The indicator lights.

OFF(▬): The tone control, muting, balance, mode, processor, and absolute phase* of the performance can be altered for the source selected with the input selector switch.

* "Absolute phase" is a capacity included on U.S.A., Canadian and Worldwide models.

4 Muting Switch (MUTING)
When the source direct switch is off, setting this switch to the -20dB (▬) position reduces the sound volume to about 1/10 (-20dB) of its full capacity. This makes low-volume adjustment easier to perform.

5 Volume Control Knob (VOLUME)
Turn clockwise to increase the volume.
This operation can be handled by remote control, using the optional RC-AV20M Onkyo programmable remote control. This remote control is equipped with Onkyo remote control codes in the memory. Set the switch at the desired position for use. For details, please refer to the instruction manual for the RC-AV20M.
With the USA, Canadian and worldwide models, this operation is also possible through remote control by using the RC-126A remote controller included with the unit.

* This volume control uses the Variable Tone Boosting System.

About the Variable Tone Boosting System
This unit is designed to gradually reduce the effect of the tone controls (contrabass, bass and treble) as the volume exceeds a certain level. The variable boosting system gradually reduces the boosting effect of the contrabass 21 and bass 20 and treble 19 controls when one or all of these controls is turned beyond (to the right) the center defeat position and the volume control 5 is turned beyond the 15 graduation (the 12: 00 position). When the volume is turned all the way up, the frequency response will be flat again. Volume settings below the 15 graduation have no effect on the tone controls. Also, bass and treble control settings below (to the left of) the center defeat position are not altered by the volume level.

6 Digital Input Selector Switch and Indicator (DIGITAL INPUT SELECTOR)
When the input selector switch 7 is set to DIGITAL, this indicator lights, and the unit can be set to the digital source of your choice.

COAXIAL
- DIGITAL 1: Audio component connected to the DIGITAL 1 jack.
- DIGITAL 2: DAT connected to the DIGITAL 2 (DAT) jacks.

OPTICAL
- DIGITAL 3: Audio component connected to the DIGITAL 3 jack.

7 Input Selector Switch (INPUT SELECTOR) and Indicator
When this switch is set to DIGITAL, the digital input selector indicator lights. At any other time, the input selector indicator lights. Set this switch to the source of your choice.

VCR: Video source with output and input capabilities connected to the VCR jacks.
VDP: Video source with the output capability only connected to the VDP jacks.
TAPE: Tape deck connected to the TAPE jacks.
DAT: Tape deck connected to the DAT jacks.
DIGITAL: Playback of the device selected with the digital input selector switch and connected to the DIGITAL 1 ~ 3 jacks.

CD-1: Compact disc player connected to the CD-1 jacks.
CD-2: Compact disc player connected to the CD-2 jacks.
PHONO: Turntable connected to the PHONO MM or MC jacks.
TUNER: Tuner connected to the TUNER jacks.

8 Open Button (PUSH OPEN)
Pressing this button opens the lower door.

9 Analog Recording Source Selector Switch (DAT/TAPE ANALOG REC)
DAT or TAPE can be selected by the recording source selector switch.
TAPE ▶ DAT/ DAT ▶ TAPE: Use either of these settings for tape dubbing operations depending on which deck is being used for playback and which is being used for recording. For details, refer to the Operations section.
OFF: When not recording or dubbing.
SOURCE: Recording from the source selected by the input selector switch 7.
TUNER: Recording from the tuner.

10 Digital Recording Source Selector Switch (DIGITAL REC)
ON: The source selected with the digital input selector switch 6 is output through the DIGITAL-2 REC jacks.
OFF: Set to this position when not recording digitally.

11 Digital Lock Indicator (DIGITAL LOCK)
This indicator shows that a digital signal is being input. According to the sampling frequency of the digital signal, the light will change color as follows: 32kHz (orange), 44.1kHz (green), 48kHz (red).

12 Video Mode Switch (VIDEO MODE)
With this control, you can select a VCR recording source and a BGV (Background Video) source.
VCR REC
- CDV: The picture of the unit connected to the CDV jack and sound from the source selected by the input selector switch 7 can be recorded on a video cassette recorder when connected to the VCR jacks.
- VDP: Sends the audio and visual signal from the video component connected to the VDP jacks to the video cassette recorder connected to the VCR jacks for recording.
- OFF: Set to this position for normal operations other than audio/visual recording, dubbing or BGV (Background Video) playback.

BGV
- VDP: The picture of a video unit connected to the VDP jack can be used as a BGV.
- VCR: The picture of a VCR connected to the VCR jack can be used as a BGV.
- CDV: The picture of a CDV player connected to the CDV jack can be used as a BGV.

• Refer to the "BGV PLAYBACK" section on page 8 for details.

• For European and Australian models

13 14 Pre-Out On/Off Switch (PRE OUT) and Indicator
When this is set to ON (▬), the signal is output to the PRE OUT jacks, and the indicator lights. Use this when using a device connected to the PRE OUT jacks.

• For USA, Canadian and Worldwide models

13 Amp Selector Switch (PRE/MAIN)
Setting this to SEPARATE (▬) separates the pre-amp section from the power amp section, allowing either to be used individually.

14 Absolute Phase Indicator
This allows you to reverse the phase using the accessory RC-126A remote controller. Press the ABSOLUTE PHASE button on the remote controller. Normally the indicator is lighted. If the phase is reversed, the indicator goes out.

15 Processor On/Off Switch (PROCESSOR) and Indicator
When this switch is set to ON (▬), the indicator lights, and units connected to the PROCESSOR jacks are enabled for use. At this time, because the signal of the source selected by the input selector switch 7 is being output through the PROCESSOR OUT jack, a graphic equalizer may be used if connected to the PROCESSOR jacks.

16 Cartridge Selector Switch (CARTRIDGE)
Set this to match the type of cartridge being used. Always reduce the volume before switching cartridges.
MC (■): Turntable using an MC cartridge.
MM (▬): Turntable using an MM cartridge.

Confirm that the turntable is connected correctly to the matching cartridge. Use the PHONO MM jacks and set to the MM position when a step-up transformer is being used with a turntable equipped with an MC cartridge.

17 Mode Selector Switch (MODE)
STEREO (■): Position for normal stereo listening.
MONO (▬): Both right and left channel signals are sent to each speaker. Position for listening to monaural recordings or when adjusting the balance control.

18 Balance Control Knob (BALANCE)
Adjust to control the relative volume level of the left and right speakers or headphones.

19 Treble Control Knob (TREBLE)
Turn right to boost or left to attenuate treble. In the DEFEAT position, the treble tone control circuitry is completely bypassed. When turned to the extreme left (−10), the treble control acts as a high cut filter to eliminate scratches, hissing and other high frequency noise.

20 Bass Control Knob (BASS)
Turn right to boost or left to attenuate bass. In the DEFEAT position, the bass tone control circuitry is completely bypassed.

21 Contrabass Control Knob (CONTRABASS)
From the DEFEAT position, turn right to boost ultra low frequencies.

22 Headphone Jack (PHONES)
Stereo headphones with a standard binaural plug can be connected here.

23 Speaker Selector Switch (SPEAKERS)and Indicator
This unit can drive two pairs of speaker systems at once. Use this selector to activate either or both speaker systems connected to the rear panel speaker terminals. In the OFF position, sound is heard only through the headphones.
OFF: All speakers off—only headphones operate.
A: Speakers A
B: Speakers B
A + B: Both speaker systems A and B.

NOTE:
When the protective circuitry is operating normally the indicator will be lighted. Also, the indicator will light a few seconds after power is turned on.

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Operations

Connect all components to the rear panel jacks as shown in the system connections section and set the front panel controls in the appropriate setting to hear the desired program source.

Normal Standby Mode

The standby positions of front panel controls and switches serve as the starting point for all operating modes.

3	Source Direct Switch	as desired
4	Muting Switch	OFF
5	Volume Control Knob	minimum (all the way to the left)
6	Digital Input Selector Switch	as desired
7	Input Selector Switch	as desired
9	Analog Recording Source Selector Switch	OFF
10	Digital Recording Source Selector Switch	OFF
12	Video Mode Switch	OFF
13	PRE OUT Jack On/Off Switch (European and Australian models)	Selected in accordance with connections.
13	Amp Selector Switch (USA, Canadian and worldwide models)	Selected in accordance with connections.
15	Processor On/Off Switch	OFF
16	Cartridge Selector Switch	Set to the type of cartridge being used.
17	Mode Selector Switch	STEREO
18	Balance Control Knob	Center
19	Treble Control Knob	DEFEAT
20	Bass Control Knob	DEFEAT
21	Contrabass Control Knob	DEFEAT
23	Speaker Selector Switch	Selected in accordance with connections.
1	Power Switch	ON

Listening to a compact disc

1. Set the input selector switch 7 in the CD-1 or CD-2 position.
2. Set the CD player for playback.

Listening to a record

1. Set the input selector switch 7 in the PHONO position.
2. Set the cartridge selector switch 16 to the type of cartridge you are using.
3. Set the turntable for playback.

Listening to a broadcast

1. Set the input selector switch 7 in the TUNER position.
2. Set the tuner to receive the broadcast that you want to listen to.

Lisening to a tape deck

Two tape decks can be connected to this unit at once.

1. If the deck connected to the TAPE jacks is to be heard, set the input selector switch 7 in the TAPE position. To listen to the deck connected to the DAT jacks, set the input selector switch 7 in the DAT position.
2. Set the tape deck for playback.

Using Video Equipment

1. Set the input selector switch 7 in the VDP position to use a video disc player or television tuner connected to the VDP jacks. Set the input selector switch 7 in the VCR position to use a video tape recorder connected to the VCR jacks.
2. Set the video equipment for playback.

* If a monitor or TV set with video input jacks is connected to the VIDEO MONI. OUT jack, visual reproduction is also possible.

To listen to a device connected to the DIGITAL jacks

1. Set the input selector switch 7 to the DIGITAL position.
2. Set the digital input selector switch to the desired position. When listening to a device connected to the DIGITAL-1 jacks, set this to DIGITAL-1, and likewise for DIGITAL-2 and DIGITAL-3.

* Noise may be generated when a device is operated, depending on the device being used. There may also be instances where the sound is interrupted by static electricity, or by noise from a refrigerator or fluorescent light. These are not considered malfunctions.

NOTES:

- After turning the power on, it takes a few seconds before the indicator lights and sound is produced.
- Rotate the volume control knob slowly to find the optimum volume setting.
- Please refer to pages 5 and 6, "Front panel facilities," and adjust the sound quality to your own satisfaction, using the tone control knobs. If necessary, you can also use the balance control knob 18 and mode selector switch 17 for fine tuning.
- When the source direct switch 3 is set to the DIRECT (■) position, MODE, BALANCE, TREBLE, BASS, CONTRABASS, MUTING, PROCESSOR, and ABSOLUTE PHASE are not effective.

Recording on the Tape Deck or DAT from the Program Source

1. Set the SOURCE position of the analog recording source selector switch 9.
2. Select the desired recording source with the input selector switch 7. For a digital source, select the source using the digital input selector switch.
3. Begin tape deck or DAT recording operations.
4. Begin program source performance.

* Be careful not to change the input selector switch or recording source selector switch while recording.

NOTES:

- When the recording source selector switch is in the SOURCE position, if DAT is selected with the input selector switch, the recording signal will not be output from the DAT jack. Likewise, if TAPE is selected, the recording signal will not be output from the TAPE jacks. (If DIGITAL2 (DAT) is selected, the recording signal will not be output from the DAT jack.)
- Because the recording monitor cannot be used with this unit when the recording source selector switch is in the SOURCE position, please use headphones in the DAT or tape deck.

Recording from the Tuner to the DAT or Tape Deck

1. Place the analog recording source selector switch 9 in the TUNER position.
2. Begin tuner performance.
3. Begin DAT or tape deck recording operation.

* Be careful not to change the recording source selector switch.

- By setting the input selector switch to another position during recording, it is possible to listen to a different source.
- If you are using a three-head tape deck, setting the input selector switch to DAT or TAPE enables you to monitor the recording conditions.

Tape-to-Tape Duplicating

When two tape decks are connected at once to this unit, a tape can be copied from one deck to the other.

1. To copy a pre-recorded tape from tape deck 1 (connected to the rear panel DAT jacks) to tape deck 2 (connected to the TAPE jacks):
   Place the analog recording source selector switch 9 in the DAT ▶ TAPE position and put tape deck 2 in the recording mode and tape deck 1 in the playback mode. If tape deck 2 is a 3-head deck, the just-recorded signal can be monitored by setting the input selector switch in the TAPE position. To monitor the signal from tape deck 1 before it has been recorded, set the input selector switch in the DAT position.
2. To copy from tape deck 2 (connected to the TAPE jacks) to tape deck 1 (connected to the DAT jacks):
   Place the analog recording source selector switch 9 in the TAPE ▶ DAT position and put tape deck 1 in the recording mode and tape deck 2 in the playback mode. If tape deck 1 is a 3-head deck, the just-recorded signal can be monitored by setting the input selector switch in the DAT position.

- During dubbing, a source other than TAPE or DAT can be listened to by changing the setting of the input selector switch.

How to do DAT Digital Recording

When DAT digital input/output is connected to this unit, DAT digital recording can be done if the digital signal is directly input to DAT.

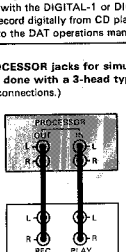
1. Set the input selector switch [7] in the DIGITAL position.
2. Set the digital recording source selector switch [10] in the ON position.
3. Set the digital input selector switch [8] in the desired position. (When the unit being recorded from is connected to the DIGITAL-1 jack, set the digital input selector switch [8] in the DIGITAL-1 position, and when the unit is connected to the DIGITAL-3 jack, select DIGITAL-3.)
4. Begin DAT recording operation.
5. Begin program source performance.

- Be careful not to change the input selector switch, digital input selector switch, or digital recording source selector switch while recording.

NOTE:

Digital recording can be done only by connecting the recording source units with the DIGITAL-1 or DIGITAL-3. Also, it is not possible to record digitally from CD players. For more details, please refer to the DAT operations manual.

Use the PROCESSOR jacks for simultaneous monitoring of recording done with a 3-head type tape deck. (See illustration for connections.)



1. Set the source direct switch in the OFF (▬) position.
2. Set the processor on/off switch in the ON (▬) position.
3. Select the source with the input selector or digital input selector.
4. Begin tape deck recording operation.
5. Begin program source performance.
6. Simultaneous monitoring of a recording is possible by setting the tape monitor switch on the tape deck to the TAPE position.

- Be careful not to change the source direct switch, processor on/off switch and input selector switch while recording.
- Simultaneous monitoring of a recording is not possible with a 2-head tape deck or a DAT, but connection is possible. Do not connect both audio and digital output at the same time, as this may cause vibration.

Recording from Units Connected to the CDV Jack onto Video Tape Recorders

1. Set the video mode switch in the VCR REC-CDV position. The jack to which the sound of the CDV player is connected should be selected with the input selector switch [7] (CD, DIGITAL-1, DIGITAL-2, DIGITAL-3, etc). Be careful not to change the input selector switch while recording.
2. Begin video cassette recorder recording operations.
3. Start the CDV player.

VDP to VCR Recording

1. Select the VCR REC-VDP position on the video mode switch.
2. Start the VCR unit, in the recording mode, connected to the VCR jacks.
3. Then start recording by activating the video component connected to the VDP jacks.

- To monitor the video program being recorded, on the monitor TV set, set the input selector switch in the VCR or VDP position. If you want to listen to an audio program while recording a video program, select the desired source by simply setting the input selector switch in the corresponding source.

BGV PLAYBACK (Background Video)

With this unit, you can play back programs on a monitor from a video component connected to the VDP or VCR jacks while playing your turntable, tuner, CD or tape decks.
In this example, you can play back a video program on a monitor by selecting the VCR REC-CDV or VDP video mode switch [12] while listening to the CD player.

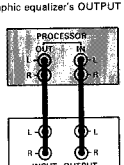
1. Select the desired audio component with the input selector switch [7].
2. Select the desired video component by adjusting the video mode switch [12] to either the BGV-VCR, VDP or CDV position.

NOTES:

- When the video mode switch is set on VCR REC-VDP or VCR REC-CDV, the video signal from the VCR is sent to the monitor regardless of the input selector switch position [7], therefore the playback signal of VCR is not interrupted even if the input selector switch [7] is turned to the VDP position.
- If there is no display from the VDP or CDV on the monitor in these positions, be sure that both input and output leads are correctly connected between the video components and amplifier, all components are turned on and the VCR is not in playback mode. More importantly, make sure that your VCR is capable of sending out an input signal.

Using a Mixing Console or Graphic Equalizer

Connect this unit's PROCESSOR OUT jack with the graphic equalizer's INPUT jack, and this unit's PROCESSOR IN jack with the graphic equalizer's OUTPUT jack.



Equalizing Audio and Video Source Performance

1. Select the desired listening source with the input selector switch [7].
2. Set the source direct switch [3] in the OFF(▬) position.
3. Set the processor on/off switch in the ON (▬) position.
4. Begin performance.

- At this time, tone control, muting, mode, and balance functions can be adjusted from this unit.

NOTE:

When recording something that has been sent through an equalizer, use an equalizer which is equipped with equalizing recording capacity.

E

When using this unit connected to another amplifier

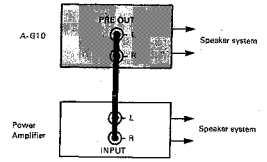
NOTE:

The method of use differs depending on the area. Please read the instruction manual carefully.

- **For European and Australian models**

Using a Power Amplifier

When you want to direct sound to the speakers of a power amplifier, surround processor, or another device, connect the PRE OUT jacks of this unit to the input jacks of that unit.



1. Set the Pre-Out on/off switch in the ON (▬) position.
2. Program source selection as well as adjustment of the volume, tone control, balance, mode, and muting can be handled through this unit.

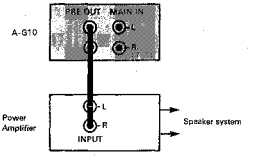
NOTES:

- With this unit, the pre-amp and power amp sections cannot be used independently of each other.
- When connecting another unit to the PRE OUT section of this device, do not connect the output of that unit to this device, as vibration may be generated.

- **For USA, Canadian and Woldwide models**

Using a Power Amplifier

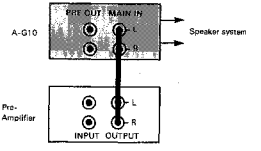
When using this unit as a pre-amplifier, connect the PRE OUT jacks of this unit to the input jacks of the power amplifier.



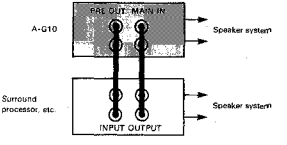
1. Set the amp selector switch to the SEPARATE (▬) position.
- If you leave the switch in the CONNECT position, sound will be output from the speakers connected to this unit.
2. Program source selection as well as adjustment of the volume, tone control, balance, mode, and muting can be handled through this unit.

Using a Pre-Amplifier

When using this unit as a power amplifier, connect the MAIN IN jacks of this unit to the output jacks of the pre-amplifier.



1. Set the amp selector switch to the SEPARATE (▬) position.
2. Set the speaker selector switch to the desired position.
- With this unit, the pre-amp and power amp sections can be used independently of each other. When using the surround processor and other built-in functions of the power amp, connect the PRE OUT jacks of this unit with the input jacks of the other unit, and the MAIN IN jacks of this unit to the output jacks of the other unit. The sound can be enjoyed from the speakers of the connected device. In this case, set the amp selector switch to the SEPARATE (▬) position.



Using the remote control transmitter (For U.S.A, Canadian and Worldwide models)

Batteries

- The remote control transmitter is powered by two batteries. Before using this unit for the first time, insert the two batteries (included) as shown in the diagram.
- Average battery life is about one year. This period may be shorter depending on the frequency of use and environment (temperature and humidity) in which the remote control transmitter is used.
- If the remote control transmitter does not operate even though front panel controls function normally, the batteries should be replaced. Use only batteries listed in the following chart.

Type	Voltage	Size
Manganese	1.5V	AA R6 UM-3

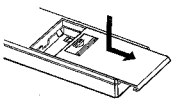
NOTES:

1. Do not leave an expired battery in the case as it may leak or damage the battery case.
2. When inserting the batteries, be sure the (+) and (−) ends are properly aligned.
3. Do not use nickel-cadmium (rechargeable) batteries.
4. Do not use one specified (manganese) battery and one alkaline battery at the same time.
5. Replace both batteries at once; do not use one old and one new battery together.

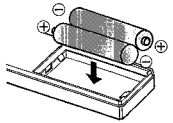
Transmitter Battery Replacement

First, take the unit out of its wooden case.

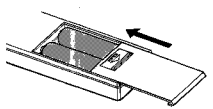
① While pressing down on the battery cover on the back of the remote controller, slide the cover in the direction of the arrow.



② Load the two batteries that came with the transmitter or two batteries listed in the table. Load them with the + and − ends facing as shown in the diagram.

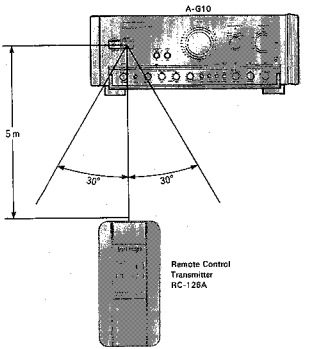


③ Slide the battery cover back in place.



Functions for remote control only

- **Volume Keys (▲ UP, ▼ DOWN)**
  This key has the same function as that of the volume control knob [5]. The volume level can be adjusted by pressing the UP or DOWN key, with the volume control knob rotating simultaneously.
- **Absolute Phase Key (ABSOLUTE PHASE)**
  This function is accessible only through the remote controller. When this key is pressed, the absolute phase indicator goes out, and the phase is reversed.



- Precautions

1. Remove the batteries if the remote control transmitter is not going to be used for a long time.
2. The batteries of the remote control transmitter must be replaced periodically.
3. This unit uses infrared rays. Therefore, commands may not be received properly if the front panel of this unit is exposed to bright light. To prevent this from occurring, place this unit so that it is not directly exposed to bright light.
4. If this unit is placed inside an audio rack behind a glass door, the door should not have colored glass or have any decorations on it, since this could shorten the range or prevent commands from being received.
5. Use of other infrared remote control devices in the same room may cause interference.
6. The transmitter operates up to a distance of about five meters (16 feet). The transmitting window must always be pointed at the reception window when a command is sent to the A-G10.
7. If this remote control transmitter does not operate properly, confirm that the batteries are not dead. If the problem persists, contact your Onkyo Service Center.

NOTE:

In some cases, the remote control function may be unusable because of external noise or a temporary power interruption. Try turning the power off and waiting at least 3 seconds before turning it on again.

E

Troubleshooting guide

If the A-G10 fails to function normally, first check the following points before contacting your Onkyo dealer. If the problem is not solved after going through the following list, unplug the power cord and contact your Onkyo authorized service center.

Problem	Cause	Remedy
No power.	• Power cord is not correctly plugged into AC outlet. • Power switch is not set to ON position.	• Plug the power cord into the AC outlet properly. • When power is taken from another preamplifier, also set the amplifier power switch to ON.
Power on but no sound.	• Bad connections.	• Check input leads, speaker leads, pin plugs, etc.
Hum, low frequency noise.	• Poor or no input ground. • Poor or no phono motor ground.	• Check outer conductor of input plugs. • Check for proper ground connection.
Howling when the volume is turned up.	• Turntable and speakers are too close together.	• Move them farther apart.
Rough or scratchy sound. High range is not clear.	• Stylus of pick-up is worn. • Stylus is dirty. • Treble control is too high.	• Replace. • Clean. • Turn treble control down.

Specifications

POWER AMPLIFIER SECTION

Power Output: **135 watts per channel, min RMS. at 8 ohms, both channels driven from 20 Hz to 20 kHz, with no more than 0.008% Total harmonic distortion.**
2 x 240 Watts an 4 ohms, 1 kHz (DIN)
2 x 155 Watts an 8 ohms, 1 kHz (DIN)

Dynamic Power: 460 watts 2 ohms, 310 watts 4 ohms
Total Harmonic Distortion: 0.008% at rated power
0.008% at 1 watt output
Intermodulation Distortion: 0.005% at rated power
Damping Factor: 150 at 8 ohms
Frequency Response: CD, Tuner: 2 Hz–50 kHz (+0, −1 dB)
Signal to Noise Ratio (IHF-A): SOURCE DIRECT: 104 dB

EQUALIZER AMPLIFIER SECTION

Phono Overload: Phono (MM): 210 mV RMS. at 1 kHZ, 0.005% THD.
Phono (MC): 9.3 mV RMS. at 1 kHZ
RIAA Deviation: Phono (MM): ±0.2 dB, 20 Hz – 20 kHz
Signal to Noise Ratio (IHF-A): Phono (MM): 89 dB(5 mV input)
Phono (MC): 85 dB (0.5 mV input)
Total Harmonic Distortion (REC 2V output) (MM): 0.003%

D/A CONVERTER SECTION

D/A Conversion: 18 bit with eight-times over sampling
Sampling Frequency: 32, 44.1, 48 kHz
Frequency Response: 2 Hz – 20 kHz
Signal to Noise Ratio: 110 dB
Dynamic Range: 103 dB
Total Harmonic Distortion: 0.0015% (at 1 kHz)
Output level: 2 Vrms

OVERALL CHARACTERISTICS

Input Sensitivity/ Impedance: Phono (MM): 2.5 mV/50 kohms
Phono (MC): 110 µV/100 ohms
CD: 150 mV/50 kohms
Tape Play: 150 mV/50 kohms
VCR Play: 150 mV/50 kohms
VDP Play: 150 mV/50 kohms
PROCESSOR IN: 150 mV/50 kohms
MAIN IN (USA, Canadian and Worldwide models): 1V/20 kohms

Output Level/Impedance: Tape Rec: 150 mV/470 ohms (Phono)
PROCESSOR OUT 150 mV/470 ohms (Phono)
Pre Out: 1 V/1 kohm

Digital Input: COAXIAL: 0.5 Vp-p/75 ohms
OPTICAL: −17.5 ~ −27 dBm (Biphase)

Digital Output: COAXIAL: 0.5 Vp-p/75 ohms

Tone Control (Vol −20 dB): CONTRABASS: +10 dB at 20 Hz
BASS: ±10 dB at 20 Hz
TREBLE: ±8 dB at 20 kHz

High Cut: 6 kHz (6 dB/Octave) (TREBLE min.)
Muting: −20 dB
Power Supply: European models (except U.K.): AC 220V, 50Hz
Canadian models: AC 120V, 60Hz
U.K. & Australian models: AC 240V, 50Hz
Worldwide models: AC 120 and 220V switchable, 50/60Hz

Dimensions: 477(W) x 183(H) x 483(D) mm 18-3/4"x7-3/16"x17-13/16"
Weight: 30 kg, 66.1 lbs.